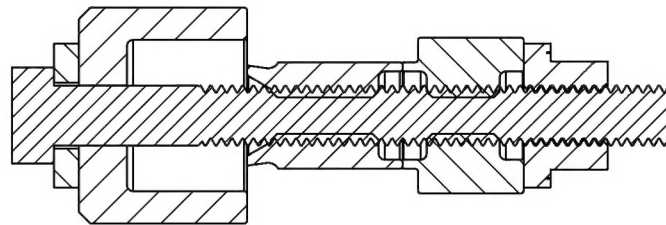
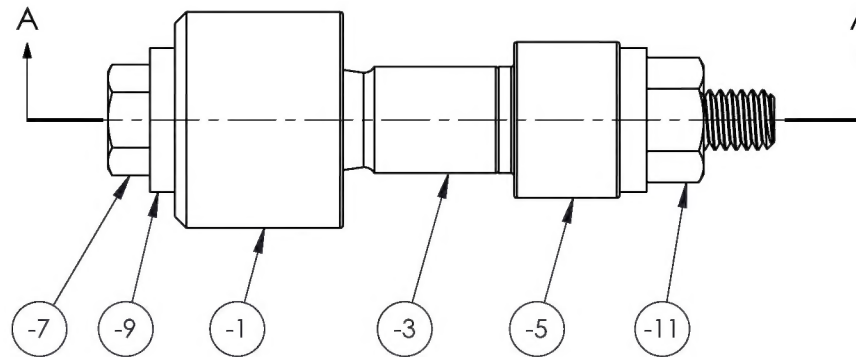


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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		ADDED ALL THE MISSING INFORMATION TO COMPLETE TOOLS NAMED. ADDED BOLT & NUT DRAWING & CORRECTED -1 INFORMATION.	9/12/08	WP	
2		ADDED TOOL KIR4103-5. ALSO REMOVED ENGRAVING FROM -3.	12/9/08	WP	
3		ADDED TOOL KIR4103-6 FOR BEARINGS MS14101-6 & MS4103-6. ALSO ADDED DIM ØE TO PART -3 REMOVER, WAS ØB.	2/24/09	WP	
3A		CH'D T/N WAS KIR*** IS RBIR***, ALL TOOLS AND SHEETS.	3/19/13	BIM	RW
4	15-0031	ADDED T/N'S FOR BEARINGS MS14101-3, -4, -5, -6, -12, -14, 16 AND MS14103-3, -4, -7A, -12, -14, -16. UPDATED -1, -3, -5, AND -7 TABLES WITH NEW TOOLS.	3/4/2015	RJC	JAG

BEARING #	TOOL #
MS14101-3	RBIR4101-3
MS14101-4	RBIR4101-4
MS14101-5	RBIR4101-5
MS14101-6	RBIR4101-6
MS14101-7	RBIR4101-7
MS14101-8	RBIR4101-8
MS14101-9	RBIR4101-9
MS14101-10	RBIR4101-10
MS14101-12	RBIR4101-12
MS14101-14	RBIR4101-14
MS14101-16	RBIR4101-16
MS14103-3	RBIR4103-3
MS14103-4	RBIR4103-4
MS14103-5	RBIR4103-5
MS14103-6	RBIR4103-6
MS14103-7	RBIR4103-7
MS14103-7A	RBIR4103-7A
MS14103-8	RBIR4103-8
MS14103-9	RBIR4103-9
MS14103-10	RBIR4103-10
MS14103-12	RBIR4103-12
MS14103-14	RBIR4103-14
MS14103-16	RBIR4103-16



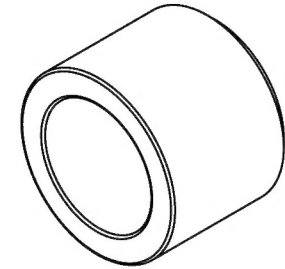
SECTION A-A

DART AEROSPACE	
TITLE PORTABLE BEARING INSTALL & REMOVAL TOOLS FOR MS14101 & MS14103	
DWG NO.	SEE TABLE
MAT'L	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ± 5° .X ± .1
DRAWN BY: CLOUGH	APPROVED: <i>Not Approved for MFG</i>
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	HEAT TREAT FINISH
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	SPEC
SCALE 1:1	DATE 2/19/2015
SHEET 1 OF 6	

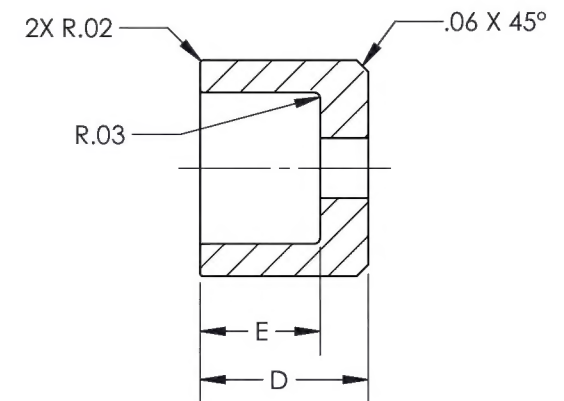
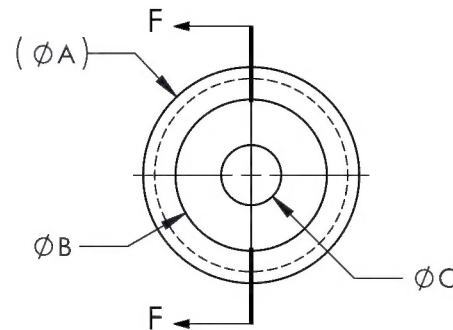
ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
			-1	1	RECEIVER	1018 / 1020	SEE CHART -1	2
			-3	1	REMOVER / INSTALLER	4141 Q&T/4142 Q&T	SEE CHART -3	3
			-5	1	ALIGNMENT SEAT	4140 Q&T/4142 Q&T	SEE CHART -5	4
			-7	1	HEX HEAD CAP SCREW	STEEL GRD 8	SEE CHART -7	5
		B/O	-9	1	WASHER	STEEL	SEE CHART -7	5
		B/O	-11	1	NUT	STEEL	SEE CHART -7	5

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0031	ADDED T/N'S FOR BEARINGS MS14101-3, -4, -5, -6, -12, -14, 16 AND MS14103-3, -4, -7A, -12, -14, -16. UPDATED -1 TABLE WITH NEW TOOLS.	3/4/2015	RJC	JAG



TOOL #	(ØA)	ØB ±.005	ØC +.005 - .000	D ±.010	E ±.010
RBIR4101-3	(Ø1.000)	Ø.663	Ø.190	.719	.469
RBIR4101-4	(Ø1.000)	Ø.756	Ø.250	.781	.531
RBIR4101-5	(Ø1.125)	Ø.850	Ø.313	.813	.563
RBIR4101-6	(Ø1.250)	Ø.913	Ø.375	.844	.594
RBIR4101-7	(Ø1.250)	Ø1.006	Ø.438	.875	.625
RBIR4101-8	(Ø1.375)	Ø1.100	Ø.500	.938	.688
RBIR4101-9	(Ø1.500)	Ø1.194	Ø.563	1.000	.750
RBIR4101-10	(Ø1.625)	Ø1.288	Ø.625	1.063	.813
RBIR4101-12	(Ø1.875)	Ø1.538	Ø.750	1.188	.938
RBIR4101-14	(Ø2.000)	Ø1.663	Ø.875	1.313	1.063
RBIR4101-16	(Ø2.125)	Ø1.850	Ø1.000	1.438	1.188
RBIR4103-3	(Ø1.000)	Ø.725	Ø.190	.875	.625
RBIR4103-4	(Ø1.000)	Ø.725	Ø.250	.875	.625
RBIR4103-5	(Ø1.125)	Ø.788	Ø.313	.875	.625
RBIR4103-6	(Ø1.250)	Ø.913	Ø.375	.938	.688
RBIR4103-7	(Ø1.375)	Ø1.038	Ø.438	1.000	.750
RBIR4103-7A	(Ø1.250)	Ø1.006	Ø.438	1.000	.750
RBIR4103-8	(Ø1.375)	Ø1.100	Ø.500	1.063	.813
RBIR4103-9	(Ø1.500)	Ø1.225	Ø.563	1.125	.875
RBIR4103-10	(Ø1.625)	Ø1.288	Ø.625	1.188	.938
RBIR4103-12	(Ø1.750)	Ø1.475	Ø.750	1.313	1.063
RBIR4103-14	(Ø2.000)	Ø1.725	Ø.875	1.313	1.063
RBIR4103-16	(Ø2.500)	Ø2.225	Ø1.000	1.813	1.563



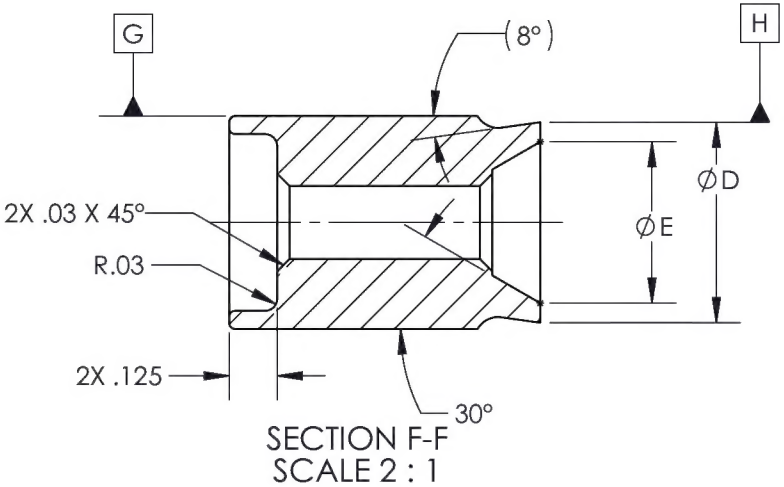
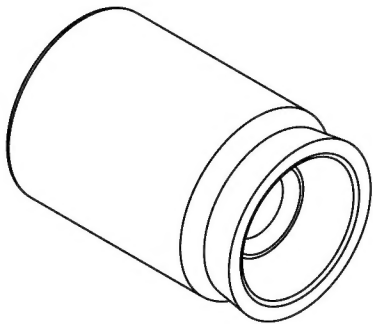
SECTION F-F

(-1)
RECEIVER

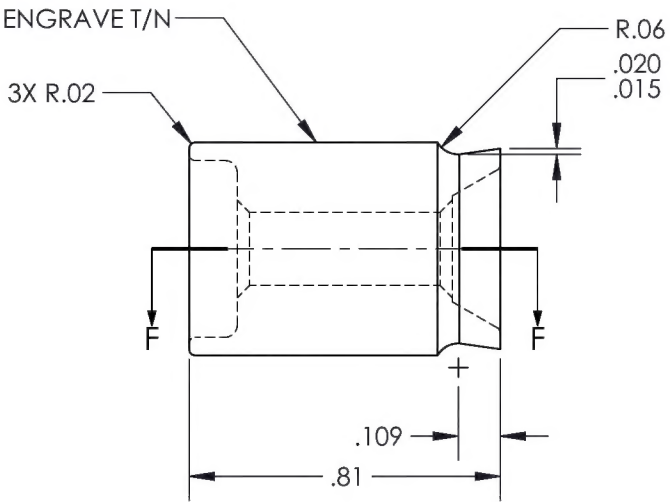
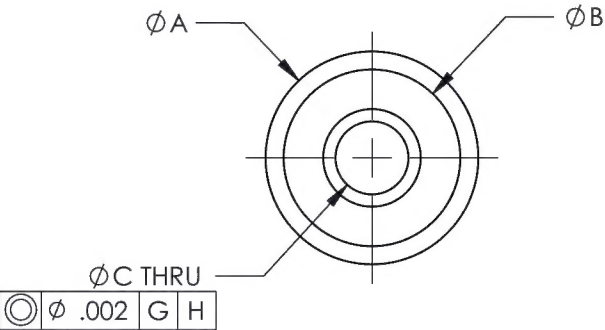
DART AEROSPACE	
TITLE PORTABLE BEARING INSTALL & REMOVAL TOOLS FOR MS14101 & MS14103	
DWG NO.	SEE TABLE-1
MAT'L 1018 / 1020	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 .XX ± .01 .X ± .1	APPROVED: <i>Not Approved For Mfg</i>
FRACTIONS ± 1/8 ANGLES ± 5°	HEAT TREAT FINISH BLACK OXIDE
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	SPEC
SCALE 1:1	DATE
SHEET 2 OF 6	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0031	ADDED T/N'S FOR BEARINGS MS14101-3, -4, -5, -6, -12, -14, 16 AND MS14103-3, -4, -7A, -12, -14, -16. UPDATED -3 TABLE WITH NEW TOOLS.	3/4/2015	RJC	JAG



TOOL #	ØA +.000 -.004	ØB ±.005	ØC +.003 -.000	ØD ±.003	ØE ±.003
RBIR4101-3	Ø.554	Ø.460	Ø.190	Ø.522	Ø.420
RBIR4101-4	Ø.648	Ø.554	Ø.250	Ø.616	Ø.514
RBIR4101-5	Ø.742	Ø.620	Ø.313	Ø.710	Ø.580
RBIR4101-6	Ø.804	Ø.672	Ø.375	Ø.772	Ø.632
RBIR4101-7	Ø.898	Ø.766	Ø.438	Ø.866	Ø.726
RBIR4101-8	Ø.992	Ø.836	Ø.500	Ø.960	Ø.796
RBIR4101-9	Ø1.085	Ø.930	Ø.563	Ø1.053	Ø.890
RBIR4101-10	Ø1.179	Ø1.023	Ø.625	Ø1.147	Ø.983
RBIR4101-12	Ø1.429	Ø1.273	Ø.750	Ø1.397	Ø1.233
RBIR4101-14	Ø1.554	Ø1.398	Ø.875	Ø1.522	Ø1.358
RBIR4101-16	Ø1.742	Ø1.586	Ø1.000	Ø1.710	Ø1.546
RBIR4103-3	Ø.617	Ø.523	Ø.190	Ø.585	Ø.483
RBIR4103-4	Ø.617	Ø.523	Ø.250	Ø.585	Ø.483
RBIR4103-5	Ø.679	Ø.585	Ø.313	Ø.647	Ø.545
RBIR4103-6	Ø.804	Ø.672	Ø.375	Ø.772	Ø.632
RBIR4103-7	Ø.929	Ø.797	Ø.438	Ø.897	Ø.757
RBIR4103-7A	Ø.898	Ø.766	Ø.438	Ø.866	Ø.726
RBIR4103-8	Ø.992	Ø.860	Ø.500	Ø.960	Ø.820
RBIR4103-9	Ø1.117	Ø.985	Ø.563	Ø1.085	Ø.945
RBIR4103-10	Ø1.179	Ø1.047	Ø.625	Ø1.147	Ø1.007
RBIR4103-12	Ø1.367	Ø1.211	Ø.750	Ø1.335	Ø1.171
RBIR4103-14	Ø1.617	Ø1.461	Ø.875	Ø1.585	Ø1.421
RBIR4103-16	Ø2.117	Ø1.961	Ø1.000	Ø2.085	Ø1.921



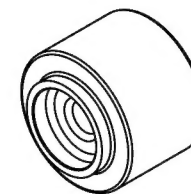
(-3)

REMOVER / INSTALLER

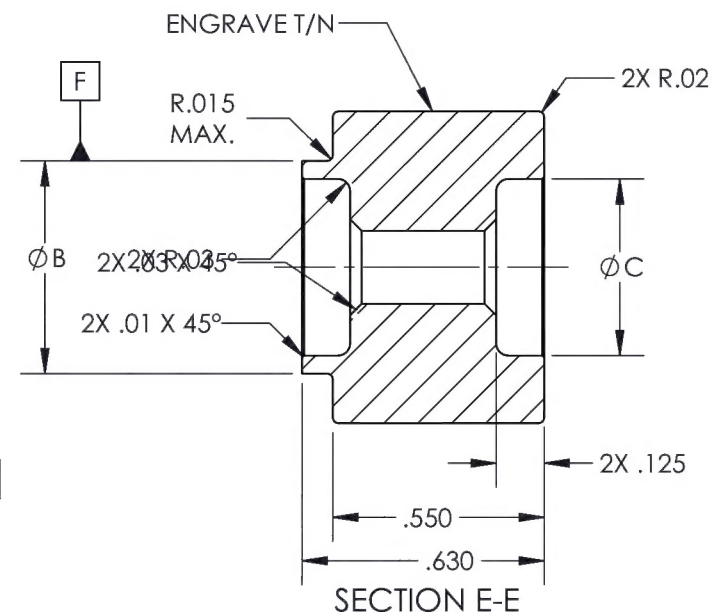
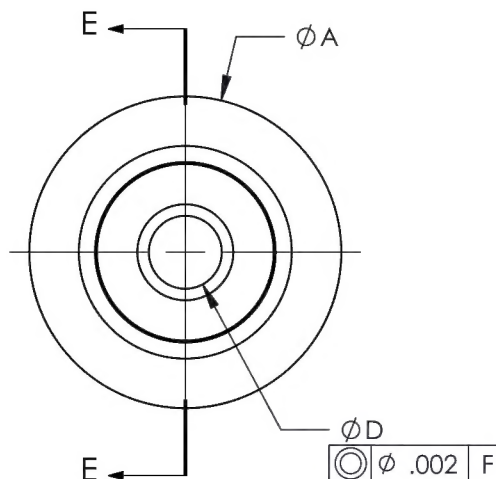
DART AEROSPACE			
TITLE PORTABLE BEARING INSTALL & REMOVAL TOOLS FOR MS14101 & MS14103			
DWG NO. SEE TABLE-3			REV 4
MAT'L 4141Q&T/4142Q&T		DRAWN BY: CLOUGH	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		APPROVED: <i>Not Approved For Mfg</i>	
.XXX ± .005		HEAT TREAT	
.XX ± .01		FINISH BLACK OXIDE	
.X ± .1		SPEC	
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R		USED ON MODEL	
2. DIMENSIONAL LIMITS APPLY AFTER PLATING		SEE CHART	
SCALE 1:1	DATE 2/19/2015	SHEET 3 OF 6	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0031	ADDED T/N'S FOR BEARINGS MS14101-3, -4, -5, -6, -12, -14, 16 AND MS14103-3, -4, -7A, -12, -14, -16. UPDATED -5 TABLE WITH NEW TOOLS.	3/4/2015	RJC	JAG



TOOL #	ØA +.000 -.010	ØB +.001 -.003	ØC +.000 -.010	ØD +.003 -.000
RBIR4101-3	Ø.812	Ø.554	Ø.460	Ø.190
RBIR4101-4	Ø.906	Ø.648	Ø.554	Ø.250
RBIR4101-5	Ø 1.000	Ø.742	Ø.620	Ø.313
RBIR4101-6	Ø1.062	Ø.804	Ø.672	Ø.375
RBIR4101-7	Ø1.156	Ø.898	Ø.766	Ø.438
RBIR4101-8	Ø1.250	Ø.992	Ø.836	Ø.500
RBIR4101-9	Ø1.343	Ø1.085	Ø.930	Ø.563
RBIR4101-10	Ø1.437	Ø1.179	Ø1.023	Ø.625
RBIR4101-12	Ø1.687	Ø1.429	Ø1.273	Ø.750
RBIR4101-14	Ø1.812	Ø1.554	Ø1.398	Ø.875
RBIR4101-16	Ø2.000	Ø1.742	Ø1.586	Ø1.000
RBIR4103-3	Ø.875	Ø.617	Ø.523	Ø.190
RBIR4103-4	Ø.875	Ø.617	Ø.523	Ø.250
RBIR4103-5	Ø.937	Ø.679	Ø.585	Ø.313
RBIR4103-6	Ø1.062	Ø.804	Ø.672	Ø.375
RBIR4103-7	Ø1.187	Ø.929	Ø.797	Ø.438
RBIR4103-7A	Ø1.156	Ø.898	Ø.766	Ø.438
RBIR4103-8	Ø1.250	Ø.992	Ø.860	Ø.500
RBIR4103-9	Ø1.375	Ø1.117	Ø.985	Ø.563
RBIR4103-10	Ø1.437	Ø1.179	Ø1.047	Ø.625
RBIR4103-12	Ø1.625	Ø1.367	Ø1.211	Ø.750
RBIR4103-14	Ø1.875	Ø1.617	Ø1.461	Ø.875
RBIR4103-16	Ø2.375	Ø2.117	Ø1.961	Ø1.000

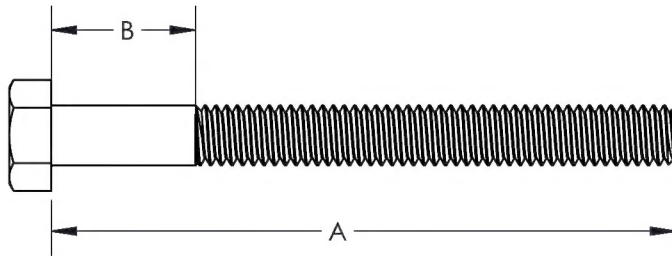


(-5)
ALIGNMENT SEAT

DART AEROSPACE	
TITLE PORTABLE BEARING INSTALL & REMOVAL TOOLS FOR MS14101 & MS14103	
DWG NO.	SEE TABLE-5
MAT'L 4140 Q&T/4142 Q&T	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED: <i>Not Approved For Mfg</i>
.XXX ± .005	HEAT TREAT
.XX ± .01	FINISH BLACK OXIDE
.X ± .1	SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	SEE CHART
SCALE 2:1	DATE 2/19/2015
SHEET 4 OF 6	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0031	ADDED T/N'S FOR BEARINGS MS14101-3, -4, -5, -6, -12, -14, 16 AND MS14103-3, -4, -7A, -12, -14, -16. UPDATED -7 TABLE WITH NEW TOOLS.	3/4/2015	RJC	JAG



(-7)

HEX HEAD CAP SCREW

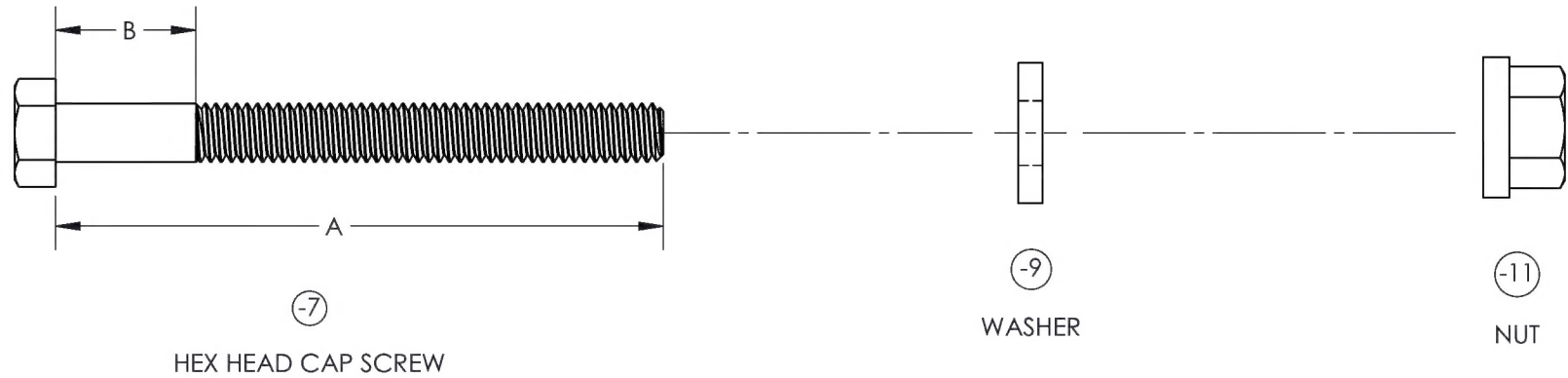
TOOL #	A	MODIFIED B/O	B
RBIR4101-3	#10-32 UNF X 2-1/2	(SPENCER AIRCRAFT #AN3-24A)	9/16 OR LESS
RBIR4101-4	1/4-20 UNC X 3	(MCMaster-CARR #91257A554)	5/8 OR LESS
RBIR4101-5	5/16-18 UNC X 3-1/4	(MCMaster-CARR #91257A594)	11/16 OR LESS
RBIR4101-6	3/8-16 UNC X 3-1/4	(MCMaster-CARR #91257A637)	11/16 OR LESS
RBIR4101-7	7/16-14 UNC X 3-1/4	(MCMaster-CARR #91257A682)	3/4 OR LESS
RBIR4101-8	1/2-13 UNC X 3-1/2	(MCMaster-CARR #91257A726)	13/16 OR LESS
RBIR4101-9	9/16-12 UNC X 3-1/2	(MCMaster-CARR #91257A771)	7/8 OR LESS
RBIR4101-10	5/8-11 UNC X 4	(MCMaster-CARR #91257A810)	15/16 OR LESS
RBIR4101-12	3/4-10 UNC X 4-1/4	(MCMaster-CARR #91257A200)	1-1/16 OR LESS
RBIR4101-14	7/8-9 UNC X 4-1/2	(MCMaster-CARR #91257A919)	1-3/16 OR LESS
RBIR4101-16	1-8 UNC X 4-1/2	(MCMaster-CARR #91257A963)	1-5/16 OR LESS
RBIR4103-3	#10-32 UNF X 2-1/2	(SPENCER AIRCRAFT #AN3-24A)	3/4 OR LESS
RBIR4103-4	1/4-20 UNC X 3	(MCMaster-CARR #91257A554)	3/4 OR LESS
RBIR4103-5	5/16-18 UNC X 3-1/4	(MCMaster-CARR #91257A594)	3/4 OR LESS
RBIR4103-6	3/8-16 UNC X 3-1/4	(MCMaster-CARR #91257A637)	13/16 OR LESS
RBIR4103-7	7/16-14 UNC 3-1/2	(MCMaster-CARR #91257A683)	7/8 OR LESS
RBIR4103-7A	7/16-14 UNC 3-1/2	(MCMaster-CARR #91257A683)	7/8 OR LESS
RBIR4103-8	1/2-13 UNC X 3-3/4	(MCMaster-CARR #91257A727)	15/16 OR LESS
RBIR4103-9	9/16-12 UNC X 3-1/2	(MCMaster-CARR #91257A771)	1 OR LESS
RBIR4103-10	5/8-11 UNC X 4	(MCMaster-CARR #91257A810)	1-1/16 OR LESS
RBIR4103-12	3/4-10 UNC X 4-1/4	(MCMaster-CARR #91257A200)	1-3/16 OR LESS
RBIR4103-14	7/8-9 UNC X 4-1/2	(MCMaster-CARR #91257A919)	1-3/16 OR LESS
RBIR4103-16	1-8 UNC X 5	(MCMaster-CARR #91257A965)	1-11/16 OR LESS

DART AEROSPACE	
TITLE PORTABLE BEARING INSTALL & REMOVAL TOOLS FOR MS14101 & MS14103	
DWG NO.	SEE TABLE-7
MAT'L STEEL GRD 8	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>Not Approved For Mfg</i>
.XXX ± .005	HEAT TREAT
.XX ± .01	FINISH BLACK OXIDE
.X ± .1	SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	SEE CHART
SCALE 1:1	DATE 2/19/2015
SHEET 5 OF 6	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0031	ADDED T/N'S FOR BEARINGS MS14101-3, -4, -5, -6, -12, -14, 16 AND MS14103-3, -4, -7A, -12, -14, -16. UPDATED -7 TABLE WITH NEW TOOLS.	3/4/2015	RJC	JAG

-7 HEX HEAD CAP SCREW (MODIFIED)				-9 WASHER		-11 NUT	
TOOL #	A	MODIFIED B/O	B	QTY.	B/O INFO OR SPEC.	QTY.	B/O INFO OR SPEC.
RBIR4101-3	#10-32 UNF X 2-1/2	(SPENCER AIRCRAFT #AN3-24A)	9/16 OR LESS	2	#10 (MCMASTER-CARR #92140A108)	1	10-32 UNF (SPENCER AIRCRAFT #AN315-3) 1
RBIR4101-4	1/4-20 UNC X 3	(MCMASTER-CARR #91257A554)	5/8 OR LESS	1	Ø1/4 (MCMASTER-CARR #92140A112)	1	1/4-20 UNC (MCMASTER-CARR #90477A029)
RBIR4101-5	5/16-18 UNC X 3-1/4	(MCMASTER-CARR #91257A594)	11/16 OR LESS	1	Ø5/16 (MCMASTER-CARR #98029A030)	1	5/16-18 UNC (MCMASTER-CARR #90477A030)
RBIR4101-6	3/8-16 UNC X 3-1/4	(MCMASTER-CARR #91257A637)	11/16 OR LESS	1	Ø3/8 (MCMASTER-CARR #98029A046)	1	3/8-16 UNC (MCMASTER-CARR #90477A031)
RBIR4101-7	7/16-14 UNC X 3-1/4	(MCMASTER-CARR #91257A682)	3/4 OR LESS	2	Ø7/16 (MCMASTER-CARR #98029A032)	1	7/16-14 UNC (MCMASTER-CARR #90499A032) 1
RBIR4101-8	1/2-13 UNC X 3-1/2	(MCMASTER-CARR #91257A726)	13/16 OR LESS	1	Ø1/2 (MCMASTER-CARR #98029A033)	1	1/2-13 UNC (MCMASTER-CARR #90477A033)
RBIR4101-9	9/16-12 UNC X 3-1/2	(MCMASTER-CARR #91257A771)	7/8 OR LESS	2	Ø9/16 (MCMASTER-CARR #98029A115)	1	9/16-12 UNC (MCMASTER-CARR #90499A827) 1
RBIR4101-10	5/8-11 UNC X 4	(MCMASTER-CARR #91257A810)	15/16 OR LESS	1	Ø5/8 (MCMASTER-CARR #97416A139)	1	5/8-11 UNC (MCMASTER-CARR #90477A035)
RBIR4101-12	3/4-10 UNC X 4-1/4	(MCMASTER-CARR #91257A200)	1-1/16 OR LESS	1	Ø3/4 (MCMASTER-CARR #98099A036)	1	3/4-10 UNC (MCMASTER-CARR #90477A036)
RBIR4101-14	7/8-9 UNC X 4-1/2	(MCMASTER-CARR #91257A919)	1-3/16 OR LESS	1	Ø7/8 (MCMASTER-CARR #98029A037)	1	7/8-9 UNC (MCMASTER-CARR #90477A037)
RBIR4101-16	1-8 UNC X 4-1/2	(MCMASTER-CARR #91257A963)	1-5/16 OR LESS	1	Ø1 (MCMASTER-CARR #98029A038)	1	1-8 UNC (MCMASTER-CARR #90477A038)
RBIR4103-3	#10-32 UNF X 2-1/2	(SPENCER AIRCRAFT #AN3-24A)	3/4 OR LESS	2	#10 (MCMASTER-CARR #92140A108)	1	10-32 UNF (SPENCER AIRCRAFT #AN315-3) 1
RBIR4103-4	1/4-20 UNC X 3	(MCMASTER-CARR #91257A554)	3/4 OR LESS	1	Ø1/4 (MCMASTER-CARR #92140A112)	1	1/4-20 UNC (MCMASTER-CARR #90477A029)
RBIR4103-5	5/16-18 UNC X 3-1/4	(MCMASTER-CARR #91257A594)	3/4 OR LESS	1	Ø5/16 (MCMASTER-CARR #98029A030)	1	5/16-18 UNC (MCMASTER-CARR #90477A030)
RBIR4103-6	3/8-16 UNC X 3-1/4	(MCMASTER-CARR #91257A637)	13/16 OR LESS	1	Ø3/8 (MCMASTER-CARR #98029A046)	1	3/8-16 UNC (MCMASTER-CARR #90477A031)
RBIR4103-7	7/16-14 UNC 3-1/2	(MCMASTER-CARR #91257A683)	7/8 OR LESS	2	Ø7/16 (MCMASTER-CARR #98029A032)	1	7/16-14 UNC (MCMASTER-CARR #90499A032) 1
RBIR4103-7A	7/16-14 UNC 3-1/2	(MCMASTER-CARR #91257A683)	7/8 OR LESS	2	Ø7/16 (MCMASTER-CARR #98029A032)	1	7/16-14 UNC (MCMASTER-CARR #90499A032) 1
RBIR4103-8	1/2-13 UNC X 3-3/4	(MCMASTER-CARR #91257A727)	15/16 OR LESS	1	Ø1/2 (MCMASTER-CARR #98029A033)	1	1/2-13 UNC (MCMASTER-CARR #90477A033)
RBIR4103-9	9/16-12 UNC X 3-1/2	(MCMASTER-CARR #91257A771)	1 OR LESS	2	Ø9/16 (MCMASTER-CARR #98029A115)	1	9/16-12 UNC (MCMASTER-CARR #90499A827) 1
RBIR4103-10	5/8-11 UNC X 4	(MCMASTER-CARR #91257A810)	1-1/16 OR LESS	1	Ø5/8 (MCMASTER-CARR #97416A139)	1	5/8-11 UNC (MCMASTER-CARR #90477A035)
RBIR4103-12	3/4-10 UNC X 4-1/4	(MCMASTER-CARR #91257A200)	1-3/16 OR LESS	1	Ø3/4 (MCMASTER-CARR #98099A036)	1	3/4-10 UNC (MCMASTER-CARR #90477A036)
RBIR4103-14	7/8-9 UNC X 4-1/2	(MCMASTER-CARR #91257A919)	1-3/16 OR LESS	1	Ø7/8 (MCMASTER-CARR #98029A037)	1	7/8-9 UNC (MCMASTER-CARR #90477A037)
RBIR4103-16	1-8 UNC X 5	(MCMASTER-CARR #91257A965)	1-11/16 OR LESS	1	Ø1 (MCMASTER-CARR #98029A038)	1	1-8 UNC (MCMASTER-CARR #90477A038)



NOTE:
1 ADD BLACK OXIDE FINISH.

DART AEROSPACE			
TITLE PORTABLE BEARING INSTALL & REMOVAL TOOLS FOR MS14101 & MS14103			
DWG NO. SEE TABLE-7			REV 4
MAT'L STEEL GRD 8		DRAWN BY: CLOUGH	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		APPROVED <i>Not Approved For Mfg</i>	
.XXX ± .005		HEAT TREAT	
.XX ± .01		FINISH BLACK OXIDE	
.X ± .1		SPEC	
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R		USED ON MODEL	
2. DIMENSIONAL LIMITS APPLY AFTER PLATING		SEE CHART	
SCALE 1:1	DATE 2/19/2015	SHEET 6 OF 6	